In the Claims

Please replace all prior versions, and listings, of claims in the application with the following claims:

1.   (Cancelled)

2.   (Currently amended) A method, as claimed in claim [[1]] 24 further comprising using an inherent property of DMT signals, wherein and that part of the signal is correlated, in the time domain, in terms of cyclic extensions.

3.   (Currently amended) A method, as claimed in claim [[1]] 24 further comprising the step wherein estimating the time mis-alignment of the cross-talk signals is estimated as the distance between the correlation maximum corresponding to the desired signal (known location) and other correlation maxima.

4.   (Previously presented) A method, as claimed in claim 3 further comprising the step wherein the amplitude of a correlation maximum is a relative measure of the power of the corresponding cross-talker.

5.   (Currently amended) A method, as claimed in claim 3 further comprising the step wherein, when the a time offset of the cross-talk is estimated at the VDSL Transceiver Unit-Optical Network Unit (VTU-O), this information will be is used to adjust its clock and frame boundaries to align with the cross-talker and hence orthogonality is achieved and the distortion is minimized.

6.   (Currently amended) A method, as claimed in claim 3 further comprising the step wherein, if the auto-correlation peak amplitude of the cross-talk signal is low, the VDSL Transceiver Unit-Optical Network Unit (VTU-O) can choose to not align clock and frame boundaries since the cross-talker then does not significantly contribute to the distortion and hence a threshold level will be is used.

7. (Currently amended) A method, as claimed in claim ~~1 characterised in that~~ 24 wherein the ~~presented~~ method ~~to estimate frame boundaries of cross-talkers~~ can be used for ~~several other~~ applications including[[, e.g.,]] Near End Cross-Talk (NEXT) ~~NEXT~~ cancellation algorithms and multi-user detection algorithms.

8. (Currently amended) A method, as claimed in claim ~~1 characterised in that~~ 24 wherein, when the ~~presented~~ method ~~to estimate frame boundaries of cross-talkers~~ is used in every starting-up modem in a system, ~~uses this method result in that~~ all modems that cause interference in each other's receivers ~~will~~ become aligned to the same frame timing.

9. (Previously presented) In a communication system having a transmission channel, a method comprising acts of:

a) receiving a carrier signal on the transmission channel;

b) applying an autocorrelation function to the carrier signal to generate a correlation signal;

c) detecting correlation maxima of the carrier signal and correlation maxima of a crosstalk signal in the correlation signal;

d) determining a time misalignment between the carrier signal and the crosstalk signal based on a time shift of the correlation maxima of the carrier signal and the crosstalk signal; and

e) adjusting a frame timing of the carrier signal based on the time misalignment.

10. (Currently amended) The method of claim 9, wherein the carrier signal is part of a Discrete Multi Tone (DMT) ~~DMT~~ modulated carrier signal.

11. (Currently amended) The method of claim 10, wherein the DMT modulated carrier signal includes cyclic extensions.

12. (Previously Presented) The method of claim 11, wherein the cyclic extensions include a cyclic prefix appended to the beginning of the DMT modulated carrier signal and a cyclic suffix

appended to the end of the DMT modulated carrier signal and wherein the act b) further comprises:

        applying an autocorrelation function to the DMT modulated carrier signal using a delayed copy of the DMT modulated carrier signal in order to correlate the cyclic extensions of the DMT modulated carrier signal.

13.   (Previously Presented) The method of claim 9, wherein the act c) further comprises:

        using the amplitude of the correlation maxima as a measure of power of the crosstalk signal.

14.   (Previously Presented) In a Very high bit rate Digital Subscriber Line (VDSL) communications system comprising a plurality of modem pairs, each modem pair including a first VDSL modem and a second VDSL modem, the method comprising:

        a) using the first VDSL modem of a first modem pair of the plurality of modem pairs to send a first discrete multitone (DMT) signal over a first transmission channel in a cable;

        b) using the first VDSL modem of a second modem pair of the plurality of modem pairs to send a second DMT signal over a second transmission channel in the cable;

        c) using the second VDSL modem of a first modem pair to receive the first DMT signal on the first transmission channel, the first DMT signal including crosstalk from the second DMT signal;

        d) applying an autocorrelation function to the first DMT signal to generate a correlation signal;

        e) detecting, in the correlation signal, correlation maxima of the first DMT signal and correlation maxima of the crosstalk from the second DMT signal;

        f) determining a time misalignment between the first DMT signal and the crosstalk from the second DMT signal based on a time shift of the correlation maxima of the first DMT signal and the correlation maxima of the crosstalk from the second DMT signal; and

        g) adjusting a frame timing of the first modem of the first modem pair based on the time misalignment.

15.   (Previously Presented) The method of claim 14, wherein the carrier signal is part of a
DMT modulated carrier signal.

16.   (Currently amended) The method of claim 15, wherein the DMT modulated carrier
signal includes cyclic extensions.

17.   (Previously Presented) The method of claim 16, wherein the cyclic extensions include a
cyclic prefix appended to the beginning of the DMT modulated carrier signal and a cyclic suffix
appended to the end of the DMT modulated carrier signal and wherein the act d) further
comprises:

        applying an autocorrelation function to the DMT modulated carrier signal using a delayed
copy of the DMT modulated carrier signal in order to correlate the cyclic extensions of the DMT
modulated carrier signal.

18.   (Previously Presented) The method of claim 14, wherein the act e) further comprises:

        using the amplitude of the correlation maxima as a measure of power of the crosstalk
signal.

19.   (Previously Presented) In a communication system having a transmission channel, an
apparatus comprising:

        a) means for receiving a carrier signal on the transmission channel;

        b) means for applying an autocorrelation function to the carrier signal to generate a
correlation signal;

        c) means for detecting correlation maxima of the carrier signal and correlation maxima
of a crosstalk signal in the correlation signal;

        d) means for determining a time misalignment between the carrier signal and the
crosstalk signal based on a time shift of the correlation maxima of the carrier signal and the
crosstalk signal; and

        e) means for adjusting a frame timing of the carrier signal based on the time
misalignment.

20.   (Currently amended) The apparatus of claim 19, wherein the carrier signal is part of a
Discrete Multi Tone (DMT) ~~DMT~~ modulated carrier signal.

21.   (Previously Presented) The apparatus claim 20, wherein the DMT modulated carrier
signal includes cyclic extensions.

22.   (Previously Presented) The apparatus of claim 21, wherein the cyclic extensions include
a cyclic prefix appended to the beginning of the DMT modulated carrier signal and a cyclic
suffix appended to the end of the DMT modulated carrier signal and wherein the means for
applying an autocorrelation function further comprise:

        means for applying an autocorrelation function to the DMT modulated carrier signal
using a delayed copy of the DMT modulated carrier signal in order to correlate the cyclic
extensions of the DMT modulated carrier signal.

23.   (Previously Presented) The apparatus of claim 19, wherein the means for detecting
correlation maxima further comprise:

        means for using the amplitude of the correlation maxima as a measure of power of the
crosstalk signal.

24.   (New) A method for keeping Discrete Multi Tone (DMT) frames aligned to the same
frame timing, for use in a telecommunications transmission system using a DMT system as a
multicarrier system and having at least two Very high rate Digital Subscriber Line (VDSL)
systems, each comprising a pair of modems, said at least two VDSL systems belonging to a
single binder group common to both VDSL systems, comprising the steps of:

        a) effecting a correlation between a received DMT signal comprising DMT symbols
having cyclic extensions and a delayed copy of the received signal;

        b) detecting correlation maxima which determine the frame boundaries of different DMT
components of the received signal;

        c) estimating the time mis-alignment from the correlation maxima; and

        d) using the estimate by the modem to synchronize its own frame timing to a main cross-
talkers frame timing.